Claims

1. A method of measuring a bronchorelaxing effect of a candidate substance on constricted human bronchi, said effect being caused by action thereof on a vanilloid (VR1) receptor in the bronchi, comprising

(a) providing an apparatus for determining the contractile state of a bronchus tissue preparation having the preparation immersed in a physiological medium mounted therein, the apparatus comprising a force transducer fixed to the preparation;

(b) establishing a substantially non-tensioned base line state of the preparation;

(c) exposing the preparation for a contraction-effective dose of a contraction-effective agent to make it assume a first tensioned state;

(d) exposing the preparation to the candidate substance;

(e) allowing the preparation to return to a base line state;

(f) repeating step (c) to make the preparation assume a second tensioned state; and

(g) comparing the contraction maxima from the respective tensioned state in steps (c) and (f) to the baseline state to obtain a measure of the bronchorelaxing efficiency of the candidate substance.

2. The method of claim 1, wherein said exposition to the candidate substance is consecutive to the first exposition to the contraction-effective agent and simultaneous with said second exposition to the contraction-effective agent.

3. The method of claim 2, further comprising comparing said measure of bronchorelaxing efficiency with that obtained with a known VR1 antagonist.

4. The method of claim 2, wherein the broncho-constrictive agent is selected from the group consisting of LTD4; cholinergic receptor agonist; adenosine receptor agonist; bombesin receptor agonist; bradykinin receptor agonist; cannabinoid receptor agonist; chemokine receptor agonist; cytokine receptor agonist; dopamine receptor agonist; glutamate receptor agonist; glycine receptor agonist; high concentration of potassium chloride; histamine receptor agonist; leukotriene receptor agonist; neuropeptide Y receptor agonist; opioid receptor agonist; platelet activating factor receptor agonist; prostanoid receptor agonist, prostaglandin, tromboxane A2; and tachykinin receptor agonist.

5. The method of claim 4, wherein the broncho-constrictive substance is leukotriene D4.

6. The method of claim 4, wherein the broncho-constrictive agent is selected from the group consisting of acetylcholine, charbacholine, metacholine, histamine, neuropeptide Y, fentanyl, platelet activating factor (PAF), prostaglandin F2-alpha, neurokinin A, neurokinin B, and substance P.

7. The method of claim 2, wherein the broncho-constrictive agent is a contraction-effective electrical field.

8. The method of claim 1, further comprising comparing said measure of bronchorelaxing efficiency with that obtained with a known VR1 antagonist.

9. The method of claim 1, wherein the broncho-constrictive agent is selected from the group consisting of LTD4; cholinergic receptor agonist; adenosine receptor agonist; bombesin receptor agonist; bradykinin receptor agonist; cannabinoid receptor agonist; chemokine receptor agonist; cytokine receptor agonist; dopamine receptor agonist;

glutamate receptor agonist; glycine receptor agonist; high concentration of potassium chloride; histamine receptor agonist; leukotriene receptor agonist; neuropeptide Y receptor agonist; opioid receptor agonist; platelet activating factor receptor agonist; prostanoid receptor agonist, prostaglandin, tromboxane A2; and tachykinin receptor agonist.

10. The method of claim 9, wherein the broncho-constrictive substance is leukotriene D4.

11. The method of claim 10, wherein the physiological medium comprises physiological saline solution and said contraction-effective dose is capable of eliciting a contraction force of at least 100 mg.

12. The method of claim 9, wherein the broncho-constrictive agent is selected from the group consisting of acetylcholine, charbacholine, metacholine, histamine, neuropeptide Y, fentanyl, platelet activating factor (PAF), prostaglandin F2-alpha, neurokinin A, neurokinin B, and substance P.

13. The method of claim 1, wherein the broncho-constrictive agent is a contraction-effective electrical field.

14. The method of claim 1, wherein the physiological medium is physiological saline solution (PSS) comprising at least one of Na^+, K^+, Mg^{2+}, Ca^{2+}, SO_4^{2-}, HCO_3^-, Cl^-, and glucose.

15. The method of claim 1, wherein said contraction-effective dose is capable of eliciting a contraction force of at least 100 mg.

16. The method of claim 15, wherein said contraction force is about from 200 to 500 mg.

17. The method of claim 1, wherein the time period from said first contraction maximum to said second contraction maximum is at least one hour.

18. The method of claim 2, wherein the physiological medium comprises physiological saline solution and said contraction-effective dose is capable of eliciting a contraction force of at least 100 mg.

19. A substance having a relaxing effect on constricted human bronchi by effecting a vanilloid (VR1) receptor in the bronchi identified by the method of claim 1.

20. A method of treating a broncho-constrictive condition in a person caused by a vanilloid (VR1) receptor agonist comprising the administration to said person of a constricted bronchi relaxing-effective dose of the substance of claim 19.